

Date: Mon, 17 Oct 94 04:30:24 PDT  
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>  
Errors-To: Ham-Homebrew-Errors@UCSD.Edu  
Reply-To: Ham-Homebrew@UCSD.Edu  
Precedence: List  
Subject: Ham-Homebrew Digest V94 #306  
To: Ham-Homebrew

Ham-Homebrew Digest                      Mon, 17 Oct 94                      Volume 94 : Issue    306

Today's Topics:

    anyone know anything about hallicrafters  
    Atlas 350XL needs CD3495 transistor. Help.  
        Cordless Phone Reciever?  
        Need info SFU455 filters  
            Powre supply  
    Q: VLF antenna design (2 msgs)  
        Range of cordless phones?  
    Screen Voltage Protection Circuit  
    Toyocom TQF-456C Roofing Filter?  
    Understanding frequency (2 msgs)

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>  
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: Mon, 17 Oct 1994 04:04:20 GMT  
From: Mike Lyon <mlyon@rahul.net>  
Subject: anyone know anything about hallicrafters

i recently picked up a old hallicrafters shortwave reciever. i would like  
to see if i can get some schematics, information or anything on it. on the  
tune dial it says "Skyrider jr." and i can barely make out the model no.  
it says model "h" in a white circle and after that it says either one of  
these, i can't tell it's a little rusty, but it's either a s-416,  
s-116, s-110, s-410. it's about a foot long and about 9 inches tall and  
about 9 inches wide. and also does hallicrafters still exist? if it does  
could anyone give me the any information on how to contact them.

thank you,  
mlyon@rahul.net

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                ///////////////////////////////////////////////////
                |      Mike Lyon      |
                |      KE6MRE      |
                |      mlyon@rahul.net      |

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Date: 13 Oct 94 18:11:25 +0800  
From: asirene@v9001.ntu.ac.sg  
Subject: Atlas 350XL needs CD3495 transistor. Help.

Hi,

A friend is repairing an Atlas 350XL transceiver and can't seem to locate a CD3495 RF transistor in the output stage. Does anyone know where to obtain this part, or to get a substitute? What are the specs of this transistor? Thanks.

73,  
RSM

-----  
Date: 16 Oct 1994 21:46:19 GMT  
From: Jeff Duntemann <jeffd@coriolis.com>  
Subject: Cordless Phone Reciever?

> John Fleming  
> (fleming@mcs.com) wrote:  
> : Does anyone know where there might be a schematic/parts list, or article,  
> : about building a receiver for standard (non-digital) cordless phone  
> : transmissions? I think they're somewhere in the 49 Mhz range, identified by  
> : 1-10 channels. Anyone Help?  
> : Thanks,  
> : John Fleming, N9NDH

Call your local Motorola distriubutor or sales office and see if they'll send you Motorola Application Note 980. It's all about using the MC3362 and MC3363, and includes a full schematic of a portable phone receiver, which could be precisely what you want. Motorola has a line of custom dual PLL synth chips with a separate synth for xmit and receive, with values embedded in internal PROM for dividing down to values appropriate for the 10 standard phone frequencies in the US. The parts count on such a system is very low. Give it a shot!

--73--

--Jeff Duntemann KG7JF  
jeffd@coriolis.com

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Date: 16 Oct 1994 20:47:14 GMT  
From: hbr@ix.netcom.com (Brian Robinson)  
Subject: Need info SFU455 filters

In <AAzGudkCq8@ra3apw.ampr.demos.su> karen@ra3apw.ampr.demos.su (Karen Tadewosyan) writes:

>  
>Hi,  
>I am looking for info about SFU455 ceramic filters. I have some SFU455A and  
>SFU455B that I plan use, if it possible, in 9600/19200 designing packet rig.  
>  
>It will be well to know the next parameters:  
>       - 6 db bandwidth  
>       - 50 db bandwidth  
>       - attenuation  
>       - insertion loss  
>       - input/output impedance  
>       - group delay time.  
>  
>Thanks in advance.  
>  
>73 de Karen                   Packet: RA3APW @ RA3APW.MSK.RUS.EU  
>Moscow, Russia               Internet: karen@ra3apw.ampr.demos.su  
>Phone: +7-095-4746283       sysop@ampr.demos.su  
>                               AMPRNet: ra3apw@gw.ra3apw.ampr.org  
>  
>

Here is some of the info:  
SFU455A: 10=/-3KHz at -3db, 5 dB insertion loss. No numbers shown in  
catalog  
for 60 dB. Only spec is "6 db selectivity @ -10 KHz."

Specs are same for SFU455B, except center f is 462 KHz., and this  
part is meant to be used with an IF transformer.

You might try Murata/Erie for more info; 2200 Lake Park Drive,  
Smryrna, Georgia 30080. Fax 404-436-3030.

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Date: 14 Oct 94 23:24:44  
From: Peter.Lam@f125.n635.z3.fidonet.org (Peter Lam)  
Subject: Powre supply

Hi,

could someone out there help me with a circuit diagram for a power supply.

I allready have a 17A, 18V transformer. All i need is a good circuit which hopefully contains a crowbar.

If you can help please leave me a message.

I was supprised there are no files to be found anywhere on power supplies.

Cheers,  
Pete (VK3LAM)

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FidoNet: Peter Lam 3:635/125  
Internet: Peter.Lam@f125.n635.z3.fidonet.org

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Date: Sun, 16 Oct 1994 18:39:56 GMT  
From: gary@ke4zv.atl.ga.us (Gary Coffman)  
Subject: Q: VLF antenna design

In article <37oolb\$9k2@nz12.rz.uni-karlsruhe.de> vhansen@ipfy.bau-verm.uni-karlsruhe.de (Wolfgang von Hansen) writes:

>  
>I need some information on how to build a VLF antenna. It shall receive  
>signals at 10-14kHz with an omnidirectional characteristic. It should also  
>be quite small [ $\leq 1\text{ft}$ ] in size.  
>Currently I am thinking of two ferrite bars (?) which are arranged  
>orthogonally. What I need to know is how to calculate the resonant circuit.  
>I also need infos on how to build a simple amplifier and connect the  
>antenna to it. A transformation of the signal to other frequencies is not  
>necessary.

There are two styles of small VLF antennas, the voltage probe, and the magnetic loop. Your proposed solution is a magnetic loop. However, a voltage probe style may be better for omni coverage. A voltage probe antenna is a small vertical whip that would typically use a MOSFET in emitter follower configuration to transform the impedance of the probe down to something manageable to drive selective circuits. Typical circuits can be found in Loran C equipment.

The magnetic loop is a very common approach for MF and LF receiving antennas. It has the fault for your application of having a sharp null perpendicular to the plane of the loop windings. If you combine the signals of two orthogonal loops using a non-additive mixer (IE a chopper), you can simulate an omni pattern fairly well.

Resonance is calculated by the formula  $F=1/(2\pi\sqrt{L\cdot C})$  with frequency in Hertz, inductance in Henries, and capacitance in Farads. Calculating the number of turns for a given inductance on a ferrite is best done by consulting manufacturer's literature. There will be charts giving a value called  $A_l$  for the particular material. This is a parametric value depending on permeability and the effective magnetic cross section of the material chosen. The number of turns required is then  $T=100\sqrt{L/A_l}$  where  $L$  is the desired inductance in microHenries.

While you will typically use discrete active devices at the beginning of your TRF amplifier chain for good noise figure, OPamps are typically used to obtain the bulk of the gain, and gyrators are used to give the large values of inductance needed for resonant circuits. Back end processing can be by use of switched capacitor filters, or today by DSP chips.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		emory!kd4nc!ke4zv!gary
534 Shannon Way		Guaranteed!		gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244				

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Date: 17 Oct 1994 04:15:40 GMT  
From: monta@pixel.mit.edu (Peter Monta)  
Subject: Q: VLF antenna design

gary@ke4zv.atl.ga.us (Gary Coffman) writes:

> > [ VLF antenna, 10--14 kHz ]  
>  
> There are two styles of small VLF antennas, the voltage probe, and  
> the magnetic loop. Your proposed solution is a magnetic loop. However,  
> a voltage probe style may be better for omni coverage. A voltage probe  
> antenna is a small vertical whip that would typically use a MOSFET in  
> emitter follower configuration to transform the impedance of the probe  
> down to something manageable to drive selective circuits. Typical circuits  
> can be found in Loran C equipment.

It sounds like he wants an Omega antenna, from the frequencies.  
I've heard that loops can give lower noise at VLF, since  
man-made noise is on the high-impedance side; still, the  
extra headaches of diversity for the two loops might  
be too much.

Peter Monta    monta@image.mit.edu  
MIT Advanced Television Research Program

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Date: 16 Oct 94 09:22:48 -0800  
From: la\_tests@ccvax6.ccs.csus.edu  
Subject: Range of cordless phones?

Hello everybody, I am new to this news group, however I am very  
interested in Amatuer radio and electronics. I have had a few classes  
and they have peaked my interest. I would like some advice though. I  
would like to know if there are any particular books out there on  
radio that describe cordless phones. Further, if anybody could give  
me advice on how to make my cordless phone perform better (longer range)  
I would appreciate.

You can E-mail me at ROMAND@CSUS.EDU

Thanks for any help or advice that you can give....

Dean Roman

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Date: Sun, 16 Oct 1994 02:09:53 GMT  
From: gary@ke4zv.atl.ga.us (Gary Coffman)  
Subject: Screen Voltage Protection Circuit

In article <37p5f2\$qlu@newsbf01.news.aol.com> ells22@aol.com (ELLS22) writes:  
>My 4-1000A Amp project is moving forward slooooooly but surely. I need  
>ideas on a sane, simple and safe (for me and the tube) interlock so that  
>screen voltage can't be applied if the plate voltage is not present. It  
>seems to me that I have to sense the 5KV directly, decide that it is or is  
>not there and lock in/out the screen voltage. The circuit also has to  
>react quickly in the event of Plate Voltage failure.

The \*simplest\* way to do this is just to derive screen voltage from  
plate voltage. Then if plate voltage is lost, screen voltage is  
automagically lost as well.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		emory!kd4nc!ke4zv!gary
534 Shannon Way		Guaranteed!		gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244				

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Date: Sun, 16 Oct 1994 13:01:50 +0000  
From: Leon@lfheller.demon.co.uk (Leon Heller)  
Subject: Toyocom TQF-456C Roofing Filter?

Hello, thanks for reading this.

A couple of years ago I picked up a 68.545 MHz Toyocom TQF-456C Xtal filter at an amateur radio rally (hamfest in the US). It was unused, and very cheap. Does anyone know anything about it? It looks like a VHF roofing filter for an up-converting front-end HF Rx. Putting it on my signal generator it appears to be quite narrow band (15 KHz?), but does anyone know what the I/P and O/P impedance is likely to be? I'd like to use it in a homebrew Rx.

Leon

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Leon Heller		"Do not adjust your mind, there is
G1HSM		a fault in reality": on a wall
Email: leon@lfheller.demon.co.uk		many years ago in Oxford.
Phone: +44 (01734) 266679		

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Date: 16 Oct 1994 05:49:02 -0400  
From: markalin@aol.com (Mark A Lin)  
Subject: Understanding frequency

Hello,

My name is Mark Lin(KE6KWR). I am a new comer here in the amateur radio. I am having trouble understanding different type of frequency, their behavior and characteristics. For example the how does the 2-meter and 4-meter frequency differe? Like I've said I am very new at this but VERY interested. If anyone can suggest any books or other source of information. I would be very grateful. Please E-mail me for reply.  
Thanks

Mark Lin (KE6KWR)

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Date: 16 Oct 1994 15:22:46 GMT  
From: jbaltz@aloha.cc.columbia.edu (Jerry B Altzman)  
Subject: Understanding frequency

In article <37qsue\$cbm@newsbf01.news.aol.com>,  
Mark A Lin <markalin@aol.com> wrote:  
>My name is Mark Lin(KE6KWR). I am a new comer here in the amateur radio.  
>I am having trouble understanding different type of frequency, their  
>behavior and characteristics. For example the how does the 2-meter and  
>4-meter frequency differe? Like I've said I am very new at this but VERY

One is twice the frequency of the other.

>interested. If anyone can suggest any books or other source of  
>information. I would be very grateful. Please E-mail me for reply.

"Look Who's Talking", the book which ARRL puts out to help you pass your  
elements 2 and 3A. You might have read it at one time.

>Mark Lin (KE6KWR)

//jbaltz  
jerry b. altzman Entropy just isn't what it used to be +1 212 650 5617  
jbaltz@columbia.edu jbaltz@sci.ccny.cuny.edu KE3ML (HEPNET) NEVIS::jbaltz

-----  
Date: 16 Oct 1994 01:01:52 GMT  
From: s2202629@np.ac.sg (Teh Aik Wen)

References<37ejpf\$iqi@info2.rus.uni-stuttgart.de>  
<37eurn\$36c@newsbf01.news.aol.com>, <37g84j\$1tkh@info2.rus.uni-stuttgart.de>  
Subject: Re: Suggestions on Lemon Powered QRP rig

Well, from reading this thread, I figured that  
moritz@ipers1.e-technik.uni-stuttgart.de  
felt that calling the experiment 'lemon powered' isn't a good idea, and  
would cause confusion to many people.

He wasn't really against the idea of it powering a QSO or for that matter,  
probably anything else, but just, the way the 'concept' is being introduced.  
(ie Lemon Power).

However, in all due respect, I would think that if the source of the  
electricity (be it from lemons or otherwise) is properly explained, it'd be



pretty cool to run a rig on a couple of lemons, or anything else, besides a battery.

For all you know, at the end of the project, KC4ROW could bring that project + a couple of lemons out on field day!

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End of Ham-Homebrew Digest V94 #306

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